

A FEW WORDS FROM THE PRESIDENT

President's Message

By Brian Timm, Director of Facilities at Omaha's Henry Doorly Zoo and Aquarium



Greetings to my AZFA colleagues. Your leadership team is fresh off a productive mid-year meeting hosted by Dave Ruhl and the Riverbanks Zoo in Columbia, South Carolina. If you have not had a chance to visit Riverbanks, you should include it on your list of places to see. The zoo is top notch, and

the garden area is spectacular. Thanks again to Dave and his team for being a gracious host to us all.

Mid-year Meeting

Current reports show that we have 341 active memberships with 26 of them coming on board since our annual conference in October. The Membership Committee is continuing their efforts to grow our numbers by taking a more active approach to our targeted audience through data collection and research. The committee is past the planning and information gathering stages and is now using this data to connect with potential members. Upcoming annual conference locations are set for Oklahoma City in 2019, Louisville in 2020, and potentially Denver in 2021. Host institutions are needed for 2022 and beyond, so please reach out to one of

our board members if you would like to discuss. Mid-year meeting sites are needed as well. Hosting a mid-year meeting is not the same as the annual conference, so this may be a good way to get your toes wet if you are considering hosting an annual conference in the future. Tommy Bryant continues to build the framework for our annual conference in Oklahoma City this October. Allmon, Tommy, and the rest of the Educational Committee are working diligently to put together a list of sessions that are sure to whet the appetite of our attendees. Topics will range from conservation/sustainability, to LSS, safety, professional development, and many more. Be sure to visit our website often for updates to the conference agenda and registration. The icebreaker will be held at the Cowboy & Western Heritage Museum and the post conference trip will be at the Tulsa Zoo. I am counting the months and days until I make the drive from Omaha to Oklahoma City to see you all.

Conservation Awareness

As I was walking through campus today, I came across a section of pathway decorated in sidewalk chalk with numerous messages and drawings centered on conservation. It is exciting to see our youth gaining an understanding of the importance of the protection, preservation, management, and restoration of natural environments. These students

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learn simple conservation tips they can use daily to reduce their impact on the environment and discover just what a difference they can make with chalk and a concrete slate. It was also refreshing to see the engagement of the adults as they walked through the informational canvas, otherwise known and the main path. We can all learn a few things from the simple messages that our school children promote. The AZFA Clark Waldram Conservation Fund is a way to become more involved in spreading the conservation message. I encourage all of you to visit our website, become familiar with the grant fund, and fill out an application if you have a project that fits the guidelines. Two grant proposals submitted to the Fund were approved by the Board at the mid-year meeting. Applications submitted by July 1st will be considered at the annual meeting.

Motivation

As the busy season begins for all of us, take time each day to appreciate the great things we do for our organizations and for the world we live in. The simple things can make the biggest difference.

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What I Learned About Heat Exchanger Operation and Maintenance

By John Kanzia, Environmental Quality Manager, Brookfield Zoo

We recently had to do some maintenance on a clogged plate-in-frame heat exchanger, and I wanted to share what I learned shadowing members of our Life Support Team and the contractor (Quintel, Inc.) that was performing the maintenance.

If you have an aquatic system outfitted with a chiller or heater to maintain your water temperature, then you probably also have some type of heat exchanger plumbed in side-stream to transfer energy to the system. The laws of physics dictate that heat will always be transferred from a hot medium to a cold medium, attempting to reach equilibrium. The two heat exchanger types most commonly used in aquariums are plate-in-frame and coil-in-tube. This particular article will deal with the former.

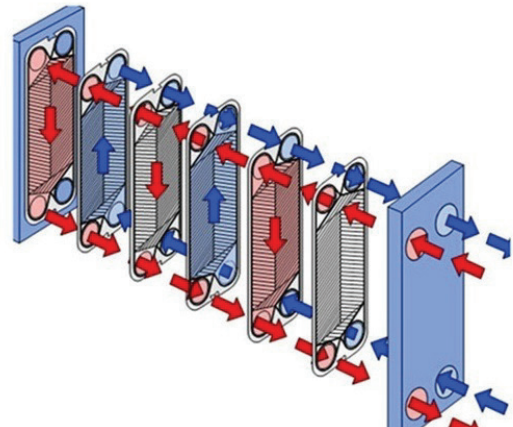


Clean plate ready for install



Severely clogged plate

Photographs by Dave Derk



Anatomy of a Plate Heat Exchanger

Typical plate heat exchangers have four ports; two on the top, and two on the bottom. The top and bottom ports on a side constitute a set. One set is for system water influent and effluent, and the other set is for chiller or boiler influent and effluent. In order to maximize contact time, the flow is counter-current. This means that one of the liquids is moving from front to back, and the other is moving from the back to the front. Gasketed plates direct water up the side of one plate and down the side of the next plate.

Source: <https://www.quora.com/How-does-a-plate-heat-exchanger-work>

In my experience, the set of pipes that is insulated is the set coming from the boiler or chiller loop, and the bare pipes are the set coming from the system. You may also have thermometers on the lines going into and out of the heat exchanger, so checking those can show you the temperature differentials of your system and boiler/chiller loop. When your system is designed, your engineer will determine how many and what type of plates (high theta for increased heat transfer, or low theta for decreased heat transfer) are needed to achieve your anticipated temperature change. The plates are installed in a specific order and orientation, so if you take apart your own heat exchanger, be sure to number the plates as they come out so they go back in the correct order and orientation.



L: Low theta



H: High theta

Source: <https://www.alfalaval.us/microsites/gphe/tools/plate-types/>

The gasket between each plate ensures that your system water is not exposed to the fluid in the chiller or boiler loop. Depending on the application, plate heat exchangers can range in size from a small garbage can to an SUV!

Heat Exchanger Maintenance

So, how often should you perform maintenance on your heat exchangers to keep them running properly? Probably the best way to determine when it is time to perform maintenance is to take flow readings on the heat exchanger influent and effluent lines when you know that the unit is clean and functioning properly, and recheck flows when you are doing your preventative maintenance checks (every 6 months is probably a good guideline). A clamp-on ultrasonic flow meter is compact, user-friendly, battery-powered, and works great. If you start seeing a deviation from the optimal flow rate, you may have some internal biofouling or scaling brewing. The key is to not wait until the unit is completely clogged, because the maintenance will be more costly (since it is more of an emergency at that point) and may take longer to remove heavier biofouling or scale deposits. We used a local company called Quintel, Inc. and for our application, they recommended breaking the unit down every 3 to 5 years to have the plates cleaned and leak tested. Since we have seasonal temperature changes here in the Midwest, there are times during the year that we might call for heating or chilling less. Using those temperature trends as a guide would be a great way to plan for preventative maintenance and/or more involved maintenance. It is probably also a good idea to keep a spare set of plates and gaskets on the shelf if budget and space permits to limit the downtime when it is time to perform maintenance that requires removing the plates.

Heat exchanger cleaners can be used to help dissolve scale deposits with the heat exchanger taken offline, however the cleaning chemical (typically enzymes or acid) may take the path of least resistance just like the water does, and may not successfully remove all of the scale. Even if cleaners are used as directed, it is a good idea to break the unit down for inspection and cleaning every few years or as needed depending on flow rates.



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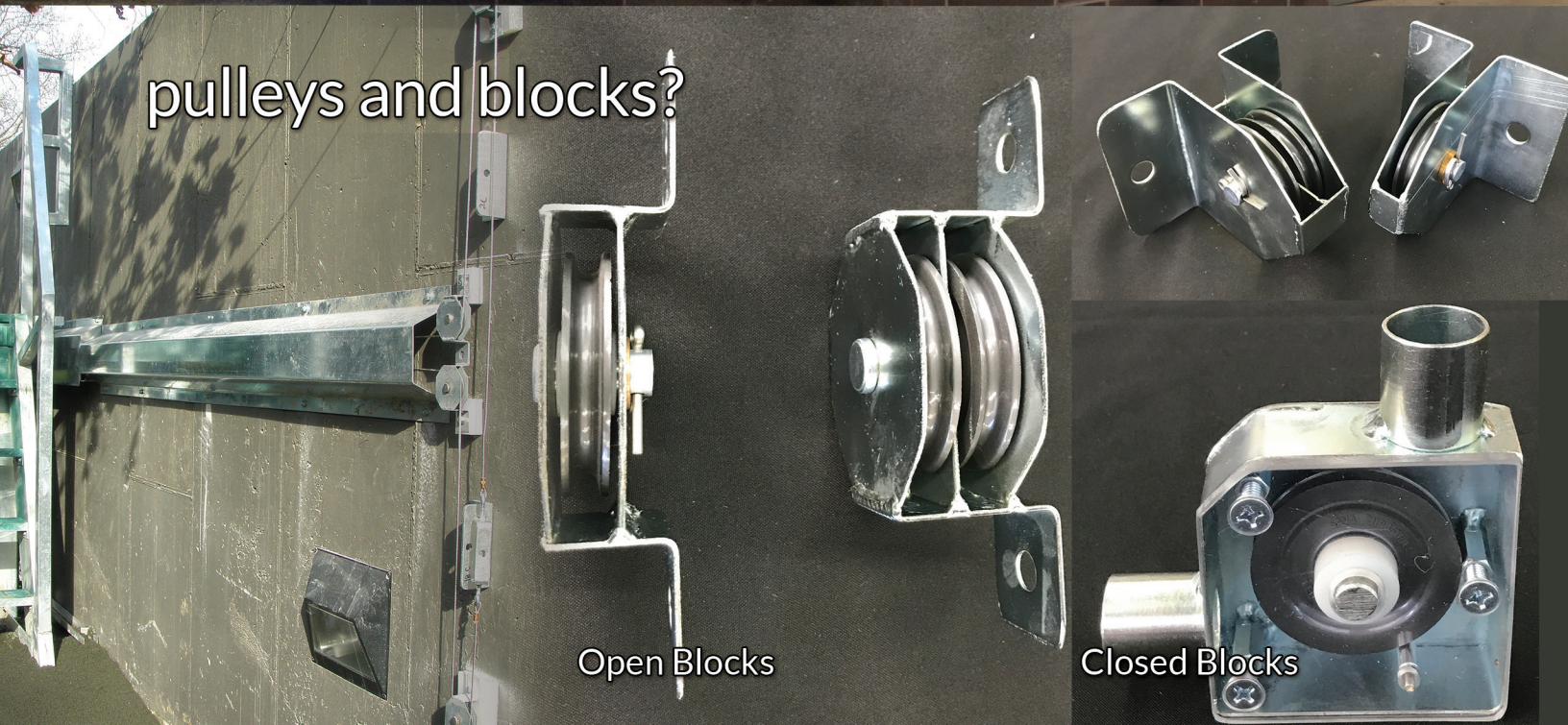
operators?

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Closed Blocks



2019 Annual Conference Call for Presentations and Program Highlights Allmon Forrester Director of Facilities, Planning, & Sustainability, John Ball Zoo

The Program & Education Committee is seeking presenters for the upcoming conference hosted by the Oklahoma City Zoo October 20 - 24, in Oklahoma City, OK.

Last fall, in Washington, D.C., we had a great education program. The sessions were a mix of presentations, workshops, and roundtable discussions. Our goal is to provide another rich program in Oklahoma City this year. The underlying theme for this year's educational program will be how we as facility professionals are key players when it comes to animal welfare at our institutions. We will also have sessions that look at sustainability, professional development, safety and emergency response, exhibit design and project management, life support systems, exhibit accessibility, and more. The list of sessions we have lined up to date will be sent out real soon.

The Program & Education Committee is dedicated to offering a program that provides the best possible value for the attendees, and we need the help of the AZFA's best asset, our membership! If you have a topic suggestion with a theme of Facilities role in animal welfare, let us know. If you would like to present at the conference, teach a workshop, or host a roundtable, or if you know someone who could, please contact Allmon Forrester, at aforrester@jbzoo.org. In order to finalize the agenda as early as possible, please respond by Friday, May 17th.

Some of our past presentations are up on the AZFA website. By going to the Past Conference drop down, you can see past conference agendas and even a few Power Point presentations.

The annual conference would not be possible without the participation and collaboration of the AZFA membership. If you have a topic that you would like to know more about, let us know. Thank you to all of the members who volunteer their time and expertise to keep the program improving year after year. See you in Oklahoma City.

The Green Scene

Data Drives Progress: Annual Green Survey

By Fia Turczynewycz, Sustainable Communities Advocate for the Cincinnati Zoo & Botanical Garden

Though this Green Scene is in AZFA's Outlet, many of you, including myself, are also members of the AZA so please let me put on my AZA hat for a moment. Sixty AZA-accredited and certified institutions reported collectively generating or purchasing over 39 million kilowatts of renewable energy in 2017, and 79 reporting institutions grew or sourced local food. How did that compare to 2018? Help us find out by submitting information about your organization's 2018 sustainable business practices by April 30, 2019.

Together, we are building a better appreciation of our collective impacts so we can more deeply understand how our community could most effectively reduce our global footprint. Responses from the survey are collected and highlighted in the Annual Report for Conservation and Science. For a highlight of the 2017 survey visit:

https://www.speakcdn.com/assets/2332/aza_arc_highlights_2017_final_web.pdf.

Common green practices reported in 2017 include comingled recycling, composting, waterwise landscaping, local food procurement (for animals and/or guests), building energy management, graywater reuse or rainwater harvesting, construction waste diversion/recycling, solar or wind energy generation, stormwater management program, and having a green purchasing policy or program. Data drives progress; we cannot change what we do not measure; and to be serious about wildlife conservation, we must be serious about natural resource conservation.

In 2014, AZA, with support from the Green Scientific Advisory Group (GSAG), which I am a part of, developed a new framework for AZA-accredited and certified related facilities to report metrics for natural resource utilization associated with their business op-

erations. This formalized reporting tool is called the Green Business Practices Survey, and was designed to record annual updates about the same green practices used for reviewing submissions for AZA's annual Green Award and detailed in AZA's Green Guides (<https://www.aza.org/green-practices>). Data from the survey is used extensively by the AZA office in an array of publications, print and social media, and in meetings with agencies and partner organizations. This data can be utilized by AZA members for their own presentations, publications, and benchmarking of progress in resource reduction over time. This data can also help drive conversations, and more importantly, action, within AZFA institutions as well.

In many cases, the contact person for filling out the survey is a facility's Executive Director/President/Chief Executive Officer, unless someone else has been identified, such as a Facilities or Sustainability Manager. The survey is accessible year-round by logging into the AZA website, and clicking on the Green Practices link in the left-hand menu.

Reference the ARCS User Manual for detailed information about inputting data:

(<https://www.aza.org/assets/2332/myazagreen-practices-usermanual.pdf>)

Frequently Asked Questions are also available online:

(https://www.aza.org/assets/2332/greenbusiness-practicessurvey_faq.pdf)

For assistance in completing the survey or to assign a different staff member as your facility's Green Practices contact, please contact Shelly Grow, Vice President of Conservation and Science (sgrow@AZA.org) or Jordyn Chace, Program Assistant (jchace@AZA.org).

The GSAG will continue to support AZA-accredited facilities in developing sustainability, and we have a few AZFA liaisons within the GSAG to link the two organizations and help us both move our institutions to more sustainable operations. We are always willing and able to share our best practices, challenges, resources, and assist with whatever you need on your sustainability journey. We can even help you fill out your survey if you have questions or confusion!



GSAG Steering Committee on South Mountain during the AZA Midyear Conference and Green Summit in Phoenix, AZ in early April. From left to right: Liz Larsen, Utah's Hogle Zoo; Mary Kate Kunzinger, Houston Zoo; Fia, Cincinnati Zoo; Wayne Warrington, Phoenix Zoo; Kyla Greenham, Toronto Zoo; Karin Stratton, Monterey Bay Aquarium Seafood Watch; Stacia Pieroni, Kansas City Zoo

New Members

Professional

Kris Ackley, Cincinnati Zoo & Botanical Garden

Susan Barton, John G. Shedd Aquarium

Michael Mercadante, President Main Street Design

Scott Ryan, Manager of Facilities, Chicago Zoological Society / Brookfield Zoo

Michael Bartlett, Facilities Supervisor, Zoo New England

Antonio Larde, Director of Facilities, Zoo New England

Ron Languasco, Facilities lead, Sacramento Zoo

Joshua Bott, Facilities lead, Sacramento Zoo

Chris Davis, Bermuda Aquarium Museum and Zoo

S. Simons, Safety & Risk Manager, Riverbanks Zoo and Gardens

Chris Emmet, Life Support/Facilities Technician, Alaska SeaLife Center

Associate

Remington Kaempfe, Maintenance, Rolling Hills Zoo

Organization

Robert Foley, President, Touch The Earth, Inc.

Commercial

Evan Kolb, President, EisenShine

Ross Bloom, Owner, BYXS Commercial

Brian Connelly, CEO, CTK Aquatics

Calendar

Deadline for articles for the next newsletter: July 15th

26th Annual Conference October 20th – 24th, 2019, Oklahoma City, Oklahoma

Publication Schedule

- Summer Issue - July
- Fall Issue - October
- Winter Issue - January
- Spring Issue - April

www.azfa.org

Don't forget to check out the AZFA website for updates and news.

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Membership

Membership Administrator

Samantha Peterson, sam.peterson@sazoo.org

Editor's Note

By Jennifer Golden, Operations Project Manager, Zoo New England

I would like to take a moment to express thanks to our Commercial Members who have supported The Outlet by advertising, and show appreciation to those who have found it beneficial to continue their advertisements this year.

Advertising in The Outlet is a great way for companies to target our unique group of professionals dedicated to the construction and maintenance of aquarium and zoo buildings, exhibits, and systems.

The Outlet currently reaches hundreds of individuals at over 75 zoos and aquariums and our membership continues to grow!

If you are a Commercial Member interested in advertising rates please contact me at jgolden@zoonewengland.com.